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## RESTORATION OF A CLIFF-DWELLER

By HARRIS HAWTHORNE WILDER

THE accompanying photograph (fig. 59) gives the result of a plastic reconstruction of a skull, by the method given in this magazine some five years ago,<sup>1</sup> but with the addition of the neck and shoulders. These additional parts are built directly on the bones of the same individual, which are fortunately in our possession, and therefore the proportions, although individual, cannot fail to be approximately correct. Their method of restoration differs widely from that of the skull, for while in this latter the soft parts are thin and to a considerable extent rigid and unvarying, we have here to deal with a movable skeleton, covered with muscles, both of which elements vary in relation and actual contour with each movement. It is thus necessary to first place the bones in the desired position, making allowance for capsules and other soft parts at the joints, and then build up the muscles, one at a time, using the muscle scars, processes, and so on as an indication of their position. Interspaces usually found filled with fat may be then filled in with the plastic substance, here plastilina, and finally a fairly uniform coating to represent the skin should be covered over the whole. Although I have never used it, it would seem advantageous to reconstruct the subcutaneous part of some material like clay,<sup>2</sup> which would harden when the work is done, and over which the outer layer could be modelled with more precision.

In the present case the considerable labor of properly adjusting the bones was obviated, since the skeletal parts had dried in their natural position, and had thus never been disassociated. This circumstance saved much trouble, and naturally furnished results that were far more reliable.

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<sup>1</sup> *American Anthropologist* (N. S.), vol. 14 (July-Sept., 1912), pp. 415-436.

<sup>2</sup> Permodello, put out by the Prang Co., would probably be very suitable for this work, as it remains soft so long as it is kept moist, but hardens when dry.

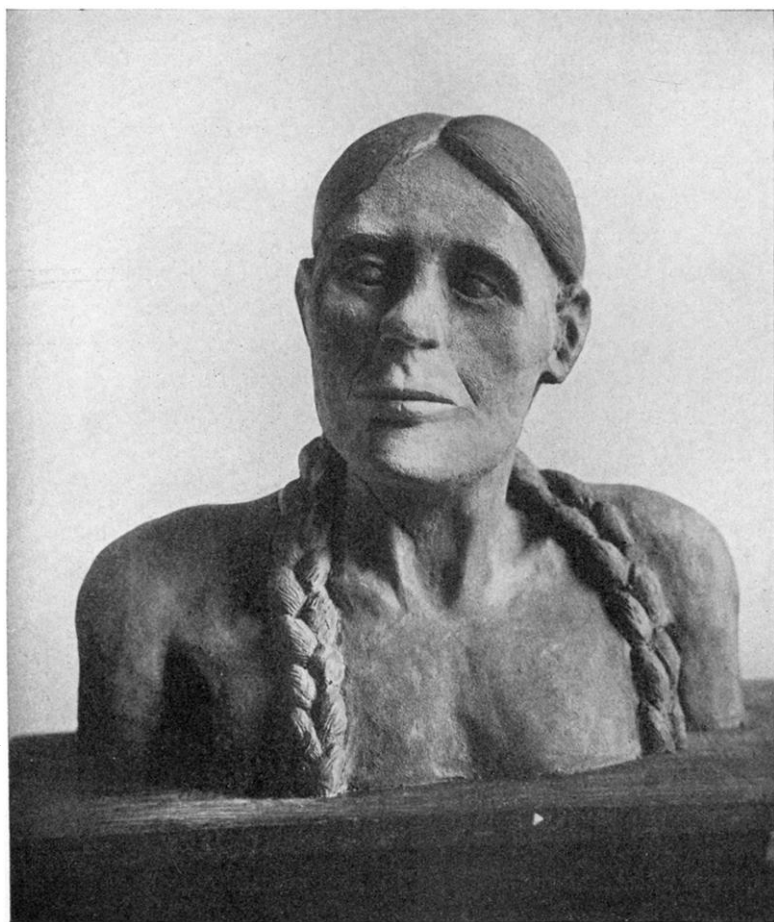


FIG. 59.

This method of restoring the soft parts from the muscle scars is not a new one, but has been employed more or less by the paleontologists, notably by Professor Lull in restoring the "frill" about the neck of *Triceratops*. His restoration of the Spy Man,<sup>1</sup> also, naturally took the muscles somewhat into consideration, although it was not built up directly on the bones themselves, as in the present case.

There are certain rather glaring errors in this restoration, due largely to inexperience, which could readily be corrected in another case; the most noticeable being, perhaps, the too high arm pit, the result of a wrong estimation of the breadth of the pectoralis major, as it runs out towards its insertion. The shoulders seem rather too high, but this is probably an individual peculiarity, as it was given by the bones in their natural position. There may be noticed in the photograph a curious twist of the end of the nose, which is apparent rather than real, and due mainly to the way the shadow falls. A careful examination of the light side of this organ shows that it is built out as fully as on the other side, and that, although in fact slightly scoliotic, there is not that drawing up of the right side that appears here.

The special matter of interest, however, and the main reason for the presentation of this paper, is that the woman here restored is the same one whom I figured in this journal thirteen years ago, as restored from the condition of a sun-dried mummy by the use of caustic potash, and it is thus of interest to compare the photograph here presented with those shown in Plate II of volume 6 (Jan.-March, 1904). Naturally there is no especial similarity in the *expression* in the two preparations, since in the former case the lips were wide apart, one eyeball was replaced by cotton, the nose had not been brought out to its full extent, and there was no hair on the head. If one recall the ease with which a good actor may become unrecognizable by simply distorting his face, he can see how fugacious and changeable a thing facial expression is. The main *features*, however, are not very different in the two cases, and the recent restoration may well represent the former one,

<sup>1</sup> *American Journal of Science* (Feb., 1910).

brought to life. In the restored mummy one saw a young middle-aged woman, rather thin than stout, with high shoulders and possibly a slight stoop; who had borne children, and been employed during her lifetime in the hard, active work of aboriginal existence. This sort of person is shown by the new plastic restoration, and, while I naturally had all this in mind while making the restoration, the definite restrictions of anatomical relations and of the measurement of thicknesses were absolutely adhered to, and no unauthorized touch was allowed, save the lines about the mouth and the slight furrowing of the forehead, which were probable, though not definitely indicated.

SMITH COLLEGE,

NORTHAMPTON, MASS.